Having thus described the invention, it is claimed:

1. A reinforced catheter comprising:

an elongate flexible tubular member defining a lumen of the catheter, the tubular member having a first end defining a proximal end of the catheter and a second end defining a distal end of the catheter;

a continuous coil reinforcement member carried on the elongate flexible tubular member and extending between the proximal end of the catheter and the distal end of the catheter;

a first flexible outer coating covering the coil reinforcement member and the tubular member substantially entirely between the proximal end of the catheter and the distal end of the catheter; and,

a second flexible outer coating covering a first portion of the first outer coating between a first transition area of the catheter and said proximal end of the catheter, a second portion of the first outer coating being uncovered by said second outer coating and defining a flexible distal tip of said catheter, the first coating being softer than said second coating.

2. The reinforced catheter according to claim 1 wherein the first flexible outer coating is softer than said second flexible outer coating.

3. The reinforced catheter according to claim 2 wherein:

said first flexible outer coating has a Shore hardness of about 40D; and,

said second flexible outer coating has a Shore hardness of about 70D.

4. The reinforced catheter according to claim 1, further comprising a marker band disposed adjacent the distal end of the catheter on the outer coating.

5. The reinforced catheter according to claim 4, wherein the marker band is formed of a one of gold material and platinum material.

6. The reinforced catheter according to claim 1, wherein the elongate flexible tubular member is formed of a polytetrafluoroethylene (PTFE) material.

7. The reinforced catheter according to claim 1, wherein the continuous coil reinforcement member is a stainless steel wire.

8. The reinforced catheter according to claim 1, wherein the continuous coil reinforcement member defines a helical pattern.

9. The reinforced catheter according to claim 1, wherein a thickness of the distal end of the catheter is less than a thickness of the proximal end of the catheter.

10. The reinforced catheter according to claim 1, wherein the first outer coating is comprised of one of a group of materials consisting of nylon material and urethane material.

11. The reinforced catheter according to claim 1, wherein the second outer coating is comprised of a nylon material.

12. A method of manufacturing multiple reinforced catheters comprising the steps of:

providing a selected length of an elongate cylindrical tube carried on opposite first and second spool members with a portion of the cylindrical tube extending between the first and second spool members;

providing a selected length of a reinforcement wire;

for substantially the length of the cylindrical tube, advancing the cylindrical tube from the first spool member to the second spool member while simultaneously wrapping the reinforcement wire onto said portion of the cylindrical tube between the first and second spool members to form a continuous length of reinforced catheter stock;

coating the reinforced catheter stock with a predetermined thickness of a first coating and followed by a second coating harder than said first coating for substantially the length of the cylindrical tube to form a continuous length of coated catheter stock; and,

cutting the coated catheter stock at selected locations corresponding to desired catheter lengths to form a plurality of reinforced catheters.

13. The method of manufacturing multiple reinforced catheters according to claim 12 further including the step of grinding the second coating of any one or more of said plurality of reinforced catheters to expose a portion of the first coating and to provide a desired outer surface finish and a desired flexibility along the longitudinal length of the catheter.

14. The method of manufacturing multiple reinforced catheters according to claim 13 further

including the step of swaging a marker band around the outer surface of the coating at a distal end of the any one or more of said plurality of reinforced catheters.

15. The method of manufacturing multiple reinforced catheters according to claim 14, wherein the step of swaging the marker band includes swaging a marker band formed of one of a group of materials consisting of gold and platinum.

16. The method of manufacturing multiple reinforced catheters according to claim 14, wherein the grinding step includes grinding a portion of the catheter beginning at a first end defining a distal end of the catheter for a predetermined distance along the longitudinal length of the catheter toward a second end defining a proximate end of the catheter.

17. The method of manufacturing multiple reinforced catheters according to claim 16, wherein the grinding step includes grinding the portion of the catheter such that the thickness of the finish coating at the distal end of the catheter is less than the thickness of the finish coating at the proximate end of the catheter.

18. The method of manufacturing multiple reinforced catheters according to claim 17, further including the step of coating a ground portion of the catheter with a predetermined thickness of a soft finish coating.

19. The method of manufacturing multiple reinforced catheters according to claim 18, wherein the

step of coating the ground portion with said soft finish coating includes coating the ground portion with a urethane material.

20. The method of manufacturing multiple reinforced catheters according to claim 12, wherein the cylindrical tube is a polytetrafluoroethylene (PTFE) material.

21. The method of manufacturing multiple reinforced catheters according to claim 12, wherein the reinforcement wire is a stainless steel wire.

22. The method of manufacturing multiple reinforced catheters according to claim 12, wherein the wrapping step includes wrapping said reinforcement wire onto said cylindrical tube in a helical pattern.

23. The method of manufacturing multiple reinforced catheters according to claim 12, wherein the coating step includes coating the reinforced catheter stock with a predetermined thickness of said first coating followed by a predetermined thickness of said second coating, the first coating having a Shore hardness of about 40D and said second coating having a Shore hardness of about 70D.

24. A reinforced catheter stock for manufacturing reinforced catheters, the catheter stock comprising:

a selected length of an elongate flexible tubular member defining a lumen of the catheter stock, the tubular member having a first end defining a lead end of the catheter stock and a second end defining a trailing

end of the catheter stock; and

a continuous coil reinforcement member carried on the elongate flexible tubular member and extending between the lead end of the catheter stock and the trailing end of the catheter stock.

25. The reinforced catheter stock according to claim 24, further comprising a continuous outer coating of first and second materials covering the coil reinforcement member and the tubular member substantially entirely between said lead end of the catheter stock and the trailing end of the catheter stock.

26. The reinforced catheter stock according to claim 25, wherein:

the continuous coil reinforcement member defines a helical pattern;

the first material has a Shore hardness of about 40D; and,

the second material has a Shore hardness of about 70D.

27. The reinforced catheter stock according to claim 24, wherein the elongate flexible tubular member is a polytetrafluoroethylene (PTFE) material.

28. The reinforced catheter stock according to claim 24, wherein the continuous coil reinforcement member is a stainless steel wire.

29. A method of manufacturing a reinforced catheter stock, the method comprising the steps of:

providing a selected length of an elongate cylindrical tube carried on opposite first and second

spool members with a portion of the cylindrical tube extending between the first and second spool members;

providing a selected length of a reinforcement wire; and

while advancing the cylindrical tube from the first spool member to the second spool member, wrapping the reinforcement wire onto the cylindrical tube at a point between the first and second spool members for substantially the length of the cylindrical tube to form a continuous length of reinforced catheter stock.

30. The method of manufacturing reinforced catheter stock according to claim 27, further comprising the step of coating the reinforced catheter stock with a predetermined thickness of a first finish coating then a second finish coating harder than said first finish coating for substantially the length of the cylindrical tube to form a continuous length of coated catheter stock.

31. The method of manufacturing reinforced catheter stock according to claim 29, wherein the step of providing said elongate cylindrical tube includes providing a polytetrafluoroethylene (PTFE) material.

32. The method of manufacturing reinforced catheter stock according to claim 29, wherein the step of providing said selected length of said reinforcement wire includes providing stainless steel wire.

33. The method of manufacturing reinforced catheter stock according to claim 29, wherein the wrapping step includes wrapping said reinforcement wire onto said cylindrical tube in a helical form.

34. An apparatus for manufacturing reinforced catheter stock, the apparatus comprising:

a first support member and a second support member, the first and second support members being spaced apart and carrying an elongate cylindrical tube with a portion of the cylindrical tube extending between the first support member and the second support member;

a winder device carrying a selected length of a reinforcement member, the winder device being adapted to wind the reinforcement member onto the cylindrical tube at a point between the first and second support members; and,

a control device simultaneously controlling i) advancement of the cylindrical tube relative to the winder device and ii) winding the reinforcement member onto said cylindrical tube by the winder device at the point between the first and second support members.

35. The apparatus according to claim 34, wherein said first support member includes a pay-out spool and said second support member includes a take-up spool, the pay-out spool and the take-up spool being responsive to the control device to pay out the elongate cylindrical tube from the pay-out spool and onto the take-up spool.

36. The apparatus according to claim 34, wherein the elongate cylindrical tube is a polytetrafluoroethylene (PTFE) material.

37. The apparatus according to claim 34, wherein the winder device includes:

a coiler tip member defining i) a central bore adapted to receive said cylindrical tube at the point between the pair of spaced apart support members, and ii) an offset opening carrying said reinforcement member, the

coiler tip member being selectively rotatable relative to said cylindrical tube to wind the reinforcement member onto the cylindrical tube at selected varied angles relative to a plane perpendicular to a longitudinal axis of the cylindrical tube.

38. The apparatus according to claim 37, wherein the winder device further includes:

a motor for rotating the coiler tip member relative to the cylindrical tube;

a spool for carrying the reinforcement member; and,

a tubular member adapted to rotate with the coiler tip member to feed the reinforcement member from said spool and through the offset opening of the coiler tip member as the reinforcement member is wound onto the cylindrical tube.

39. The apparatus according to claim 38, wherein the winder device is adapted to wind the reinforcement member onto the cylindrical tube in a helical pattern.

40. The apparatus according to claim 34, wherein the reinforcement member is comprised of a stainless steel wire.